



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,699	06/15/2001	Xiaoming Ren	107044-0009	1351
24267	7590	04/06/2004	EXAMINER	
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			YUAN, DAH WEI D	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary

Application No.

09/882,699

Applicant(s)

REN, XIAOMING

Examiner

Dah-Wei D. Yuan

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-113 is/are pending in the application.
- 4a) Of the above claim(s) 1-23, 63-113 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01142004, 01272004</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
|--|--|

Art Unit: 1745

**METALLIC LAYER COMPONENT FOR USE
IN A DIRECT OXIDATION FUEL CELL**

Examiner: Yuan

S.N. 09/882,699

Art Unit: 1745

March 26, 2004

Detailed Action

1. The Applicant's amendment filed on March 2, 2004 was received. The specification was amended. Claim 23 was cancelled. Claims 24,29-32,36-38,44-46,48,50,53 were amended.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on January 29, 2003.

Specification

3. The amendment filed on March 2, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "...said openings being of a size so as limit mass transport of an associated fuel substance therethrough to said anode face of said membrane electrode assembly to produce electricity generating reactions and to allow the mass transport of carbon dioxide produced in said reaction away from said membrane electrode assembly" in claim 24; "... said openings being sized to limit the transport of oxygen to said cathode face of said membrane electrode" in claim 44.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 24-62 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The recitations "...said openings being of a size so as limit mass transport of an associated fuel substance therethrough to said anode face of said membrane electrode assembly to produce electricity generating reactions and to allow the mass transport of carbon dioxide produced in said reaction away from said membrane electrode assembly" in claim 24 and "...said openings being sized to limit the transport of oxygen to said cathode face of said membrane electrode" in claim 44 are not supported in the instant disclosure. If applicant believes said terms are fully defined, it is requested that applicant indicates column and line, and/or figure with number, in the specification.

6. The claim rejections under 35 U.S.C. 112, second paragraph, on claims 24-62 are withdrawn. Claim 24 has been amended. The term "generally parallel" in claims 24,41,44,54 is understood as shown in Figures 2A,5-8, in which metallic diffusion layers on both the anode and the cathode side as being parallel to the protonically conductive membrane. The term "does not substantially react with methanol, or other reactants and byproducts of the electricity generating

Art Unit: 1745

reactions” in claims 28,49 is understood as “the material should not cause a chemical change in the fuel composition, or an appreciable chemical change in the other components in the fuel cell; and the material should not act to dissolve or corrode the components or cause contamination due to any such dissolution or corrosion, any or all of which could lead to degradation or minimization of performance of the fuel cell”. The claim rejections under 35 U.S.C. 112, second paragraph, on claims 29,38,50 are withdrawn, because these claims have been amended. The claim rejections under 35 U.S.C. 112, second paragraph, on claim 48 are withdrawn, because the claim has been amended.

Claim Rejections - 35 USC § 102

7. The claim rejections under 35 U.S.C. 102(e) as being anticipated by Cisar et al. on claims 24-30,33,37,38,41-51,54-62 are withdrawn, because the independent claim 24 has been amended.

Claim Rejections - 35 USC § 103

8. The claim rejections under 35 U.S.C. 103(a) as unpatentable over Cisar et al. and Yu et al. on claims 31,32,34-36,39,40,52,53 are withdrawn, because the independent claim 24 has been amended.

Response to Arguments

9. Applicant's arguments filed on March 2, 2004 have been fully considered but they are not persuasive.

Applicant's principle arguments are

The instant specification teaches the pore size is selected to limits the mass transport of the fuel substance such that active flow of materials does not occur but instead, the metallic diffusion layer allows diffusion to be the dominant process in the transport of fuel from the anode chamber to the anode metallic diffusion layer.

In response to Applicant's arguments, please consider the following comments.

The claimed subject matters in claims 24,44 are not supported in the instant disclosure. In contrary, the specification teaches one of the objects of the invention is to provide a dimensionally stable diffusion layer with controlled optimal pore distribution to enhance mass transport of the reactants and byproducts of the electricity generating reactions. In particular, Figure 3C shows a metallic diffusion layer that facilitates the anode and cathode reactions by creating discrete and continuous mass transport paths through the component for each of the liquid reactants and byproducts, the gaseous reactant and byproducts. See specification, page 5, lines 26-29; page 13, lines 20-22. Therefore, claims 24-62 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 1745

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan
March 26, 2004

A handwritten signature in black ink, appearing to read "Dahwei Y", with a long horizontal flourish extending to the right.